**3GPP TSG-SA WG6 Meeting #48-e S6-220677Rev4**

**e-meeting, 5th – 14th April 2022 (revision of S6-22xxxx)**

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| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **23.558** | **CR** | **0092** | **rev** | **<Rev#>** | **Current version:** | **17.3.0** |  |
|  | | | | | | | | |
| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* | | | | | | | | |
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| ***Proposed change affects:*** | UICC apps |  | ME | **X** | Radio Access Network |  | Core Network | **X** |

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| ***Title:*** | Update to EEC registration update procedure | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Samsung | | | | | | | | | |
| ***Source to TSG:*** | S6 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | EDGEAPP | | | | |  | ***Date:*** | | | 2022-03-29 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | F |  | | | | | ***Release:*** | | | Rel-17 |
|  | *Use one of the following categories:* ***F*** *(correction)* ***A*** *(mirror corresponding to a change in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)*  Detailed explanations of the above categories can be found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | | | | | | | | *Use one of the following releases: Rel-8 (Release 8) Rel-9 (Release 9) Rel-10 (Release 10) Rel-11 (Release 11) … Rel-15 (Release 15) Rel-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | SA6 has received LS in S6-220495 with following question:  “In clause 8.4.2.2.3 of TS 23.558, upon receiving the EEC registration update request with list of AC profile(s), how does the EES respond when the EES determines that the requirements indicated in the AC profile(s) cannot be fulfilled for at least one AC profile?”  It is required to provide clarification in the specification to handle this specific case.  Similar clarification is also needed for EEC registration procedure too. | | | | | | | | |
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| ***Summary of change:*** | | Added clarification to EEC registration and EEC registration update procedure. | | | | | | | | |
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| ***Consequences if not approved:*** | | The specification remains ambiguous for stage#3. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 8.4.2.2.2, 8.4.2.2.3, 8.4.2.3.3, 8.4.2.3.5 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  |  | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | |  |  | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  |  | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

\* \* \* First Change \* \* \* \*

##### 8.4.2.2.2 EEC registration

Figure 8.4.2.2.2-1 illustrates EEC registration procedure.

Pre-conditions:

1. The EEC is authorized to access the EES for the purpose of performing registration and has received relevant security credentials as specified in clause 8.11; and

2. The EEC has received service provisioning information from the ECS, including information for accessing the EES.



Figure 8.4.2.2.2-1: EEC registration procedure

1. The EEC sends EEC registration request to the EES. The request from the client includes the security credentials received after successful authorization for edge computing services and may include a proposed expiration time. The request also optionally includes information indicating to the EES how the EEC expects to use the services of the EES.

If the EEC is moving to this EES from the purview of another EES, called S-EES, the request from the EEC may include the identity and endpoint of the S-EES and an EEC context ID that was provided by the S-EES to maintain continuity of the EEC context and to authorize EEC context relocation. If the EEC registration is being performed as part of ACR, the EEC shall not include the S-EES endpoint and the EEC context ID.

2. Upon receiving the request from the EEC, the EES validates the registration request and verifies the security credentials. The EES further determines whether the requirements that were indicated in the AC Profile(s) can be fulfilled and reserves corresponding resources.

3. Upon successful validation of the request, if the received EEC registration request contains an EEC context ID and a S-EES Endpoint, the EES performs a EEC Context Pull relocation (clause 8.9.2.2) from the S-EES. The source and target EES perform EEC Context handling as detailed in clause 8.9.1.

NOTE 1: Only a single EEC Context ID may be provided in the EEC registration request.

NOTE 2: In this version of specification, each registration procedure relocates a single EEC context.

NOTE 3: Step 3 is executed when EEC determines to change its connection from S-EES to T-EES and ACR is not required.

If the EEC registration request fails after the EEC Context Pull relocation, e.g., the EES cannot reserve the necessary resources while meeting the capability requirements of the existing registered EECs, the EES shall determine the EEC Context information stale and send a failure response with a corresponding cause.

4. The EES sends a successful EEC registration response, which includes the registration ID and may include a newly assigned EEC context ID. If the EEC registration request contains AC Profile(s), and the EES determines that the requirements indicated in the AC profile(s) cannot be fulfilled for some of the AC profile(s), the EES shall include the list of ACIDs of such AC Profile(s) and may include appropriate reasons. If step 3 was executed, the EEC registration response also includes EEC context retrieval result. The EEC stores the new EEC context ID and uses it if and when it registers with another EES. The EES may also provide an expiration time to indicate to the EEC when the registration will automatically expire. To maintain the registration, the EEC shall send a registration update request prior to the expiration. If a registration update request is not received prior to the expiration time, the EES shall treat the EEC as implicitly de-registered.

If the EEC context relocation status indicates that the EEC context relocation was not successful, then the EEC performs the required EDGE-1 subscriptions at the T-EES.

\* \* \* Next Change \* \* \* \*

##### 8.4.2.2.3 EEC registration update

Figure 8.4.2.2.3-1 illustrates EEC registration update procedure.

Pre-conditions:

1. EEC has already registered with the EES.



Figure 8.4.2.2.3-1: EEC registration update procedure

1. The EEC sends EEC registration update request to the EES. The request from the client includes the security credentials received after successful authorization for edge computing services and may include a proposed expiration time and AC profile(s).

2. Upon receiving the request from the EEC, the EES validates the registration update request and verifies the security credentials.

3. Upon successful validation of the request, the EES sends a successful registration update response, which may include updated expiration time to indicate to the EEC when the updated registration will automatically expire. If the EEC registration update request contains AC Profile(s), and the EES determines that the requirements indicated in the AC profile(s) cannot be fulfilled for some of the AC profile(s), the EES shall include the list of ACIDs of such AC Profile(s) and may include appropriate reasons.To maintain the registration, the EEC shall send a registration update request prior to the expiration time. If a registration update request is not received prior to the expiration time, the EES shall treat the EEC as implicitly de-registered.

\* \* \* Next Change \* \* \* \*

##### 8.4.2.3.3 EEC registration response

Table 8.4.2.3.3-1 describes information elements in the EEC registration response from the EES to the EEC.

Table 8.4.2.3.3-1: EEC registration response

|  |  |  |
| --- | --- | --- |
| Information element | Status | Description |
| Successful response | O | Indicates that the registration request was successful. |
| > Registration ID | M | Identifier of the EEC registration. |
| > Expiration time | M | Indicates the expiration time of the registration. To maintain an active registration status, a registration update is required before the expiration time. |
| > EEC context ID | O | Identifier of the EEC Context information available at the EES that performed the registration. |
| > EEC Context Relocation status | O | Indicates whether the EEC context retrieval from the S-EES was successful or not. |
| > list of unfulfilled AC information | O | List of ACIDs of the AC Profile(s) for which the requirements indicated in the AC profile(s) cannot be fulfilled |
| >> ACID | M | Application Identifier |
| >> reason | O | Reson indicating the cause (e.g. EAS not available, requirements cannot be fulfilled, etc.) |
| Failure response | O | Indicates that the registration request failed. |
| > Cause | M | Provides the cause for registration request failure. |

\* \* \* Next Change \* \* \* \*

##### 8.4.2.3.5 EEC registration update response

Table 8.4.2.3.5-1 describes information elements in the EEC registration update response from the EES to the EEC.

Table 8.4.2.3.5-1: EEC registration update response

|  |  |  |
| --- | --- | --- |
| Information element | Status | Description |
| Successful response | O | Indicates that the registration update request was successful. |
| > Expiration time | M | Indicates the expiration time of the registration. To maintain an active registration status, a registration update is required before the expiration time. |
| > list of unfulfilled AC information | O | List of ACIDs of the AC Profile(s) for which the requirements indicated in the AC profile(s) cannot be fulfilled |
| >> ACID | M | Application Identifier |
| >> reason | O | Reson indicating the cause (e.g. EAS not available, requirements cannot be fulfilled, etc.) |
| Failure response | O | Indicates that the registration update request failed. |

\* \* \* End of Change \* \* \* \*